

Jie Bao

PERSONAL INFORMATION

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EDUCATION

SUMMER 2019 - WINTER 2021	Concordia University , Montreal, Quebec, Canada <i>Master of Applied Science, Mechanical Engineering</i> , GPA: 4.0/4.3 Thesis: Machine Learning Techniques for Turbulence Modeling Applied Machine Learning - COMP551 (McGill Campus IUT), <i>Grade: A</i> Machine Element Design - MECH 344, <i>Grade: A-</i>
FALL 2015 - WINTER 2019	Concordia University , Montreal, Quebec, Canada <i>Bachelor of Engineering, Aerospace Engineering</i> <i>Engineer Apprentice, Bombardier Aerospace</i>

COMPUTER SKILLS

PYTHON, TENSORFLOW, MATLAB, TABLEAU, CSS/JAVASCRIPT, SQL, C++, MS OFFICE, CATIA, ANSYS

WORK EXPERIENCE

CURRENT	Graduate Student Researcher , COMPUTATIONAL AEROSPACE LAB <i>Turbulence Modeling Technique using Machine Learning Techniques</i> Performed feature quality analysis using algorithm such as Relief. Data cleaning, acquisition and analysis using Matlab and Python. Created an end-to-end ML training pipeline for turbulent production and dissipation values. Achieved over 90% R^2 accuracy. Currently, working on analysing the NACA 0012 airfoil. Check out the progress on website and my other works.
SUMMER 2018	R&D Intern in Advanced Systems , BOMBARDIER AEROSPACE <i>Hydraulic System Modeling using MBSE</i> Improved the design approach using model-based system engineering for the GLOBAL 7500 hydraulic system using the CAPELLA software (operational architecture down to physical architecture). The approach proved to expose design problems early in the preliminary phase and allows collaboration between the many engineering disciplines. I gained a comprehensive understanding of the hydraulic system. Presented to subject-matter experts during bi-weekly workshops.
SUMMER 2017	Intern in Structure Design & Standard , BOMBARDIER AEROSPACE <i>Cabin Window Trade Study on Next-Gen Business Jet</i> Conduct a cabin window trade study with respect to § 25.807 for future business jet program, perform cost & weight estimation for Product Planning, benchmark with competition in the same aircraft segment, proposed cabin window position, installation type, and size recommendation.

TEACHING ASSISTANT

CURRENT	AERO 490 - Final Year Capstone Aerospace Engineering Design Project <i>Supervised by Dr. Jonathan Liscouët</i> I assist weekly design reviews alongside Dr. Jonathan Liscouët and it is my responsibility to oversee the design process of the senior aerospace students. I provide guidance, share my engineering best practices and the experience further nourished the teacher in me. During this pandemic, an additional task is to arrange the resources for students and ease the online transition. Coordinate manufacturing access with the in-residence engineers and remotely distributing engineering software. In turn, I enhanced both my capability to act as a leader and my interpersonal skills.
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ACADEMIC PROJECT

2018-2019	AERO 490 - Final Year Capstone Aerospace Engineering Design Project <i>Supervised by Dr. Catharine Marsden</i> Conceptual design of an arctic transport aircraft. Market analysis and develop business case. Perform trade studies and constraint diagram. Aircraft static & dynamic stability compliance for airworthiness.
FALL 2017	AERO 390 - Preliminary Rudder System Design <i>Supervised by Dr. Susan Liscouët-Hanke</i> Perform the safety and reliability assessment - ARP 4761. Define Aircraft and System level requirements using interdisciplinary approach - RFLP method. Use 3DEXperience software to track the requirements and to model the rudder system physical level.

ENGINEERING COMPETITION

FALL 2018	Engineering and Computer Science Association Competitions Week <i>Senior Design - Concordia University, Montreal, QC</i> Designed and assembled a remotely controlled car using an Arduino board and other provided material. Awarded 3 rd position.
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CERTIFICATE

MAY 2016	Aircraft Familiarization Training (312h) at L'École National d'Aérotechnique
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LANGUAGES

FRENCH:	Fluent
ENGLISH:	Fluent
CHINESE (MANDARIN):	Fluent
GERMAN:	Basic Knowledge

INTERESTS AND ACTIVITIES

World History, Current World Affairs, Avid Tennis player, Running, Programming